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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,546	10/08/2003	Stefan Spahr	2322.68522	7769

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EXAMINER

AFTERGUT, JEFF H

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 12/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/681,546

Applicant(s)

SPAHR ET AL.

Examiner

Jeff H. Aftergut

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>4-28-04</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-12, and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 further taken with PCT WO 94/16911.

The references to either one of Meggiolan '398 or '248 suggested that those skilled in the art at the time the invention was made would have formed a hub for a bicycle by placing a resin impregnated fabric material upon a mandrel which was capable of expansion via its coefficient of thermal expansion. The laid up mandrel was then disposed within a second shaping device, i.e. a mold, having two symmetrical parts assembled together. The assembly was then heated to expand the mandrel or core and shape the composite material against the second mold disposed thereabout. The second mold had a shape substantially the same as the first mold as identified in the figures therein. The references both taught the steps of providing a winding device having at least a first shaping device, applying a predetermined quantity of fibers with resin (cross linking thermosetting material) upon the first shaping device, inserting the first shaping device into a second shaping device and spacially expanding the first shaping device including the fibers and first cross linking agent toward the second shaping device and lastly removing the expanded body from the second shaping device

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(once the resin is set the references suggested that the mandrel was removed from the cured assembly). The references suggested that the thickness of the layers applied to the mandrel which was expanded were suitable for formation of the hub and that it was preferred to provide a greater thickness of material on the exterior portions of the hub than in the central region (but that such an arrangement was merely preferable).

The reference to PCT '911 suggested that one skilled in the art at the time the invention was made would have known to form a hub for a wheel which included molding the same wherein the assembly including the hub was provided with uniform thickness in order to provide the desired strength and stiffness obtained with a metal wheel. In other words, it was desirable in the art of hub manufacture to provide the same with uniformity in thickness throughout the entire part in order to facilitate a finished part formation which had the same stiffness and strength as that of a metal hub assembly. As such, one skilled in the art viewing PCT '911 would have understood that it would have been desirable to provide uniformity in thickness for the hub assembly of either one of either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 in order to render the hub assembly such that it had equal strength and stiffness to that of a metal hub assembly for a bicycle wheel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide ply construction such that the thickness of the build up on the mandrel in either one of either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 provided a hub which when molded had uniformity in thickness in the finished assembly as such was recognized in the art as desirable as suggested by PCT WO 94/16911.

With regard to the various dependent claims, note that the references to either one of either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 suggested the specified manipulative steps and/or materials utilized to make the hub assembly. It should be noted that the distance between the two shaping bodies would have been uniform when the thickness of the plies utilized to make the assembly was of uniform thickness as suggested by PCT '911. The references clearly suggested the removal of the first shaping device from the assembly after expansion of the first composite. Regarding claim 6, note that the references to either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 suggested the use of a flexible material for the mandrel. Regarding claim 7, note that the references suggested the use of heat to expand the mandrels. Regarding claim 8, note that the references to either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 suggested that the mold into which the mandrel was disposed included two separate mold halves. Regarding claim 9, the references suggested that application of heat provided for the curing of the assembly. Regarding claim 10, the references suggested that the fibrous material included carbon fibers. Regarding claim 11, note that the references suggested that one skilled in the art would have incorporated fabric material for the hub. Regarding claim 12, note that the specified materials were known thermosetting materials and one skilled in the art would have been expected to utilize such conventional materials. Regarding claim 21, note that the references clearly suggested the specified processing for the manufacture of a bicycle hub. Regarding claims 22 and 23, note that the references suggested the specified thickness for the finished hub assembly.

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3. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with either one of Japanese Patent 57-98320 or Japanese Patent 61-220828.

While the references as set forth above suggested that those skilled in the art at the time the invention was made would have incorporated a bladder inside a mold to form the hub for the bicycle, the references failed to make use of a core onto which the bladder was disposed for placement of the fibers thereon prior to inflation of the bladder in the mold. It should be noted that the use of an expandable inflatable mold would have been understood to have been an alternative type of expandable mold to one which expanded as a function of the coefficient of thermal expansion of the bladder material itself. The references to either one of Japanese patent '828 or Japanese Patent '320 both suggested that those skilled in the art at the time the invention was made would have incorporated a rigid metal core onto which the bladder was disposed for fiber placement thereon followed by removal of the metal core and placement of the bladder in the mold and inflation of the same. The applicant is referred to the abstract of the disclosure of each of these references. The use of the rigid metal bladder ensures that the material being disposed on the bladder is adequately supported during fiber placement on the bladder. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the techniques of either one of Japanese Patent 61-220828 or Japanese Patent 57-98320 to provide a mandrel suitable for fiber lay up prior to insertion and inflation (expansion) of the same in the shaping mold as such a rigid member would have allowed for proper placement of the fiber material on

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the bladder during lay up of the same in the process of making the bicycle lug as set forth above in paragraph 2.

4. Claims 13-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the references as set forth above in paragraph 2 further taken with Easton et al.

The references to either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 suggested that those skilled in the art would have desired to incorporate a bladder in the manufacture of a hub for a bicycle wheel. The references both suggested that the end portions of the hub would have been provided with an additional thickness of composite material at the ends, however such was formed in the process by laying up additional plies of material on the ends of the bladder disposed in the mold. It, however, would have been obvious to the ordinary artisan to incorporate a separate bladder which added the additional reinforcement on the end of the structure inside the initially formed layer as evidenced by Easton. Easton suggested that for a bicycle component where it was desired to promote increased flex in the finished bicycle component while maintaining the same as lightweight. The reference to Easton suggested that one skilled in the art would have obtained this by adding additional reinforcement to the inside of an already formed tube by placement of a bladder carrying the reinforcement thereon inside the tube and inflation of the bladder wherein the resin impregnated fiber reinforcement was bonded to the inside of the first formed tube. One skilled in the art would have understood that when it was desired to have an increased thickness of composite material at the ends of the hub for example as suggested by either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398, one

skilled in the art would have simply added an additional bladder with additional reinforcement at the ends of the hub and inflated the same in order to provide the needed additional thickness and reinforcement of the hub. It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the techniques of Easton in order to provide additional reinforcement where desired in the finished hub assembly as set forth above in paragraph 2 as Easton suggested that such processing was known to have been useful for bicycles and the references to either one of Meggiolan 2002/0108248 or Meggiolan 2002/0109398 suggested that thicker end portions on the hub were desirable.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 13-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 13 appears to be incomplete. The claim states that the third shaping body was disposed into a body blank and that the second fibers and second cross linking agent were bonded to the body blank, however there is no use of a first or second shaping means. Additionally there is no mention of a first fiber or a first cross linking agent. It appears (see claim 14) that the claim was intended to be made dependent upon claim 1 and that the body blank which was formed was formed according to the techniques set out in claim 1. It is therefore suggested that in claim 13 the applicant

recite all of the steps set out in claim 1 and further define that such processing produced a body blank and then recite the placement of the second fibers upon the third shaping device and the additional processing steps recited in claim 13.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Trimble appears to suggest the use of bladder forming techniques to make a bicycle component where an additional insert was provided and inflated with a bladder in the manufacture of the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff H. Aftergut whose telephone number is 571-272-1212. The examiner can normally be reached on Monday-Friday 7:15-345 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jeff H. Aftergut

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Primary Examiner
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JHA
December 12, 2005